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THE PART PLAYED BY CONSCIOUSNESS IN MENTAL OPERATIONS

THAT each consciousness is to itself a unity has long been recognized. It has also been understood in a general way that consciousness helps to coordinate and unify cerebral activities. It has, however, been often disputed whether attention may be given to more than one process at one time. This question is transformed by investigations of cases of double consciousness and by recent controversies regarding the subconscious into that of whether there can be two separate unifying consciousnesses acting at the same time in the same brain. The case reported by Dr. Prince in this JOURNAL, of January 30, may very well serve as a test case for deciding these disputed points and for determining the real part that consciousness plays in mental operations.

In this case it appears that two rather complex operations were performed at the same time and, according to Dr. Prince's view of the case, one operation, that of writing a poem, was directed by one unified consciousness designated as *A*, while another unified consciousness, called *b*, was engaged in performing the mathematical operation of computing the number of seconds elapsing between 3:15 and 4:33. Consciousness *A*, according to its own testimony and so far as could be observed by others, was fully occupied with copying a poem and knew nothing of the significance of the figures expressing the time which were written on the margin of the paper. Consciousness *b* had, however, been informed that such a problem would be given, and when evoked at the close of the writing of the poem reported at once the solution of the problem. If it be admitted that such a mental operation as solving a problem of this kind can be carried on successfully only under the direction of consciousness, as Dr. Prince seems to assume, then there is no way of avoiding his conclusion that while the ordinary consciousness is seemingly occupying the whole field and doing its work, another consciousness, designated by the term "subconscious," may be directing other operations. If this is admitted the way is open for all kinds of suppositions regarding the performance of operations by a consciousness

separated from the primary consciousness. If, however, such operations may be carried on successfully by the physiological mechanism without the direction of consciousness, then there is no reason to use the term subconscious in the sense of a consciousness directing operations without the knowledge of the primary consciousness.

In the case of acts that have been performed a great many times it is admitted that the physiological mechanism may carry on successfully quite complex operations, with little if any supervision by consciousness. We perform a multitude of acts every day that at one time could be performed successfully only by close attention, while our attention is focalized on something else, and there is nothing more than a marginal consciousness of the familiar operations in which we are engaged, and in some instances even a marginal knowledge of the performance of those operations seems to be absent. When learning to read, consciousness was completely focalized upon the process, but most adults have frequently had the experience of reading a page while intently thinking of some other subject. In the case of many persons almost any process may be so completely mechanized that it can be performed as well or better without attention as when consciousness undertakes to supervise the process. A good illustration of this is that of the short-hand court reporter who, after he became expert at taking down testimony, trained himself to do so while he gave his thought to other matters. He was thus able to take the testimony and at the same time converse with a friend. He gave no attention to his work and yet took down every word with as much accuracy as a phonograph.

Persons who attempt to do two things at once, such as writing a poem and solving a problem, usually find that they can do so with greater or less success. In most persons there seems to be a consciousness of the two processes and the consciousness is focalized upon the most difficult or least familiar of the two processes or it changes from one process to the other whenever the difficulties presented make it necessary. Some persons, however, who have practised doing two things at a time, seem to be able to produce a double focalization within the single consciousness. If the two focalized phases of this consciousness were separated so that one was not marginal to the other, then we should have the condition which Dr. Prince describes as existing in the case he has reported. On theoretical grounds it can not be denied that such a division of a consciousness into two parts is possible. On the other hand, the possibility should not be admitted as an actuality without convincing proof. Evidence from the subjective side, so far as it is pertinent, should perhaps be regarded as conclusive, but if the two states of consciousness are entirely separate, then one can give no testimony

regarding the existence of the other. It is only where one consciousness is marginal to the other that any testimony can be given regarding the existence of the other consciousness. The existence of a consciousness entirely separate from another consciousness must be shown objectively, therefore, by proving that processes not known to the existent consciousness and that could not be performed without consciousness, are actually performed.

It is pretty generally recognized that physiological laws control the association of ideas as well as the performance of habitual acts. The helplessness of consciousness is impressed upon one by the familiar experience of unsuccessful effort in trying to recall a familiar name. Those who persist in trying to recall a name do so by trying to focalize consciousness upon something connected with the name. If they can succeed in focalizing upon something that has been many times associated with the name, the physiological apparatus responds by presenting the name to consciousness. Many persons find that the name is more likely to be presented if they cease trying to bring it into consciousness and focalize upon something else. It is also a common experience to be asked a question and to say that we do not know, and then, a little later, without any further conscious thought upon the matter, suddenly to realize that we do know the answer. Facts such as these, indicating that what is presented to consciousness is determined by physiological processes, are common not only where associations have been formed by previous experience, but also when we are searching for new ideas. In writing an article one holds in mind what he is trying to do and notes the relevance of ideas as they come and directs thought by accepting what is relevant and rejecting what is not. It is not unusual for a person who has been trying to solve a problem in mathematics, science, mechanics, art, or literature suddenly to become conscious of the solution. This may occur when the mind is for the time being occupied with some other subject, and it may occur immediately after waking from sleep. In exceptional cases the solution of the problem has been worked out on paper during sleep, and in others has been presented in the form of a dream. It is not at all unusual for poets and novelists to report that the poem or plot of the novel comes to them ready made instead of being consciously constructed bit by bit.

Such facts as the above indicate that in new as well as in familiar activities the content of consciousness is not determined primarily by consciousness itself, but by the action of the physiological mechanism. It is, however, going entirely too far to say that consciousness has no control whatever over its content. Every one knows that he can, to a considerable extent, determine what the content of his consciousness shall be, however powerless he may be in certain cases.

The manner in which consciousness may do this and in fact the real part that consciousness plays in mental operations may be suggested by a comparison of the physiological mechanism with other machines. It is a well-known fact that a properly constructed machine may be made to perform not only single operations with great accuracy, but a long series of complex operations. The same machine may also be made to do a number of different things by a slight change in its adjustment or the connection between its parts. There is good reason for believing that the brain is just such a machine, with the exception that it is infinitely more complex than any inorganic mechanism, and with the further exception that what it can do is determined not only by its original structure, but also by the changes produced in it by its previous activities. There is every reason to believe that the possibility of performing any mental operation, simple or complex, new or old, depends upon the structure and functioning of the nervous system. Consciousness can not do of itself or cause the nervous system to do anything which its nervous structure does not fit it to perform.

The real function of consciousness, in the performance of mental operations, is suggested by reaction-time experiments. When one prepares to react by a certain motion to a given signal he is very likely to react before the signal is given or in response to some other signal. This would seem to indicate that the apparatus has been set to do a certain thing, and whenever the mechanism is started, by whatever means, it does that thing without direction of consciousness. After it is done, consciousness is aware of the act and knows whether it corresponds or does not correspond to the intention. We see, therefore, that consciousness adjusted the apparatus for the performance of the act and received a report of what was done, but that it had nothing whatever to do with the actual performance of the act. Common experience shows that such adjustment may be made a long time before the act is to be performed. This is true when one says, "When I put on my coat to come home I must do a certain errand," or, "When I see a person I must give him a message." Without any further thought about the matter such adjustments may result in the performance of the act at the proper time. Adjustments may also be effective after an interval of unconsciousness, as when one resolves to waken at a certain signal and does so. Any one by practise will become able thus to respond to a particular stimulus, as, for example, the stirring of a patient, by awakening, and some persons can do so without practise. It is also true that some persons can set themselves to waken at a certain hour and do so with almost as great certainty as that with which an alarm clock strikes at the time for which it is set. Adjustments for more com-

plex processes are sometimes made by speakers who prepare a speech to be delivered at a certain time and place, and give little or no thought to the matter until the time comes.

Adjustments may also be made for responding to certain stimuli without reference to the time or place when such response is to be given. A good illustration of this is given by John Burroughs. He had become interested in hylas. He says: "One Sunday, walking amid some bushes, I captured two. They leaped before me as doubtless they had done many times before, but though not looking for or thinking of them, yet they were quickly recognized because the eye had been *commissioned* to find them. On another occasion, not long afterward, I was hurriedly loading my gun in the October woods in the hopes of overtaking a gray squirrel that was fast escaping through the tree tops, when one of these lilliput frogs, the color of the fast-yellowing leaves, leaped near me. I saw him only out of the corner of my eye and yet bagged him because I had already made him my own."

If it should be admitted that consciousness does nothing in the way of controlling the mental operations except (1) to adjust the cerebral apparatus for the performance of the act by focalizing upon the thing to be done, and (2) to note the result, as conforming or not conforming with that intended, then we can easily explain such cases as that reported by Dr. Prince without supposing the existence of a subconsciousness directing operations without the knowledge of the ordinary consciousness. The subject described by him perhaps differed from other persons chiefly in the fact that the cerebral apparatus had been trained in the simultaneous performance of separate, unrelated acts, to a greater extent than that of most people. Consciousness could adjust the nervous apparatus for the performance of one act, then concern itself with other processes. The adjustment having been made, when the figures that were to be the signal for performing the act were presented, the act was perhaps carried out without any supervision by consciousness, and later reported. The case does not differ from that of ordinary experience except in the fact that usually we can not adjust the nervous apparatus for performing such a complex act so completely that it will be performed successfully without some marginal or focal consciousness of the partial results whose proper linking together constitute the successful progress toward the result planned. Dreams usually lack cohesion because there has been no adjustment for the accomplishment of a definite end, or because there is no report of what is done at each stage or readjustment by consciousness to lead to the end planned. Sometimes, however, the adjustment of the cerebral apparatus, because of recent interest in solving some prob-

lem, is such that problems are completely solved in dreams. Some people are able to exercise some control over their dreams. If this power were developed and practised until they could set themselves to dream the answer to questions that might be asked, they would be in a condition similar to that of Dr. Prince's subject.

If it be admitted that the function of consciousness is to adjust the nervous apparatus for the performance of certain acts and to note whether the results correspond or lead to those anticipated, then the phenomena of dreams, hypnotism, double consciousness, and so-called subconsciousness do not differ essentially from ordinary mental operations. Everything that the mind does is the result of physiological functioning, and consciousness does nothing but adjust the mechanism and note the results. Ordinarily it must do this at every step in the performance of a complex process and adjustment, for the performance of only one process at a time is made, but under exceptional circumstances or because of special training the physiological apparatus may perform very complex operations without consciousness directing the partial readjustments at each stage of progress, and it may perform more than one non-habitual act simultaneously.

The seemingly prominent part that consciousness plays in all new and complex activities is probably in part illusory. The intentions which produce the adjustments of the apparatus and the steps in the processes follow one another so closely that it seems as if consciousness were doing the whole thing. In reality the case is probably similar to that which makes one feel as if he were the active agent in all that is being done by a machine that he is controlling, when, as a matter of fact, he makes only a few slight movements and the mechanism does the rest. In a similar way consciousness is continually adjusting the cerebral mechanism by focalizing on one or another element that is presented and noting its relation to the end in view, but everything that is brought to consciousness is brought there by the working of the physiological mechanism.

Believers in the subconscious will doubtless say that thus far the most important evidence of the existence of consciousness in connection with the performance of operations that are carried on outside of the primary consciousness, has not been mentioned. This fact is that not only has the operation been performed, but in a hypnotic state subjective details can be given of how it was performed and of the feelings accompanying its performance. This is undoubtedly a feature of the phenomena of great importance, yet there are many facts of a normal experience of a similar nature. We sometimes understand what a person has said a short time after the words were uttered when we did not understand them at the time.

We may also be able to report details of what we have seen, but we are not conscious in the original perception of having noticed them. Memory of what was not consciously learned is by no means unusual, as illustrated by the classical example of the ignorant servant girl repeating, while in a fever, passages in Greek and Latin that she did not know anything about in her ordinary consciousness, she having incidentally heard these passages repeated by her master. An example from common experience similar to this is that of a man in whose presence an item of local news was mentioned while his attention was occupied with something else. A little later he told this news to the family, and when asked where he read it said that he believed he read it in the paper.

It is generally admitted that memory depends upon the reactivity of at least a part of the same apparatus that was active in the original experience. It may be claimed, therefore, not without reason, that it matters not whether consciousness was present or not, at the time of the original functioning. If consciousness is present when the apparatus is made to function again in a similar way, it may be able to report details that would have been known at the time, had consciousness been present.

It is true that it is a serious matter to refuse to accept the subjective testimony of consciousness regarding itself. The question here raised, however, is not as to reliability of direct introspection, but as to the testimony of consciousness as to its states when a process that is now remembered was being performed. Undoubtedly there are various degrees of reliability to be attached to the testimony of the consciousness of different people regarding past experiences. There is reason for thinking that the testimony of those who are exceptional to such an extent that they can perform complex operations without any normal consciousness of their being done, is likely to be less reliable than that of more normal people.

The possibility of mental operations taking place in practically the same way at one time with, and, at another, without, consciousness must be given due weight in considering this question. We know that this is possible in the case of a large number of automatic and habitual acts such as breathing and writing, which are usually performed with little or no direction, and sometimes without the awareness of consciousness, but which may at any moment be brought under conscious control. Some individuals find it more difficult to learn what they try to learn than that which they make no effort to acquire. One, who by the greatest effort is unable to learn the simplest mathematical processes, may, without any effort on his part, compose poems, stories, or essays, beautiful in sentiment and language. Again, it is not at all unusual for the brain, when once

started to working in a certain way, to go on working out the solution to some problem in spite of the efforts of consciousness to direct the activity in another line.

Conscious control of mental operation, so far as it exists, is largely acquired by experience, and to perform without consciousness may be also developed by training. Conscious control of such functions as the shedding of tears and the beating of the heart that are usually entirely beyond the control of consciousness, may be acquired by some individuals, so other individuals may acquire the power of carrying on complex operations such as are usually performed only under the direction of a focalized consciousness without being aware that the operation is being performed, being wholly occupied with the direction of some other operation. It is probable that most of the subjects of hypnotic experiment have had a good deal of training in the performance of complex acts without conscious direction. Very slight changes in the adjustment of the cerebral apparatus are sufficient to bring about very marked changes in the processes performed. The hypnotizer is one who is skillful in arranging conditions so as to bring about the desired adjustment. The hypnotic subject becomes a good performer in proportion as his cerebral apparatus is trained in functioning without the direction of his own consciousness, but in response to suggestion of the hypnotizer. The skilled hypnotizer trains the nervous mechanism of his subject so that it can perform quickly and accurately the various processes without the interference of the subject's own consciousness.

The term "physiological functioning" may mean practically the same thing as "subconscious." Were the term subconscious used merely to indicate *processes* carried on without the knowledge of the normal consciousness, the term would be convenient and unobjectionable. When, however, the term is used to indicate *states of consciousness* unknown to the primary consciousness, we have an entirely different conception from the physiological one. It is true that both terms are used to indicate processes of which we know but little, yet it is important to know which term and which conception is likely to lead most surely to complete and accurate knowledge of the nature of these unknown processes. It is also of vital importance to the science of psychology to decide this question, because it is very closely bound up with the more fundamental question of the real function of consciousness in all mental operations.

It is doubtful whether objective evidence can do anything more than establish the probability or improbability of consciousness being present in any given case. There is reason for thinking that the nervous apparatus working without consciousness may, under favorable circumstances, perform almost any sort of an act that can

be performed with consciousness. Without consciousness, however, the performance of complex processes in a coordinated way, especially when they involve a new mode of functioning, will be rare exceptions instead of the usual thing.

One's judgment is likely to be influenced in considering the existence of subconsciousness by the number of facts brought to his attention of complex processes that seem to be directed by physiological laws only, as compared with the number of facts indicating that there was a consciousness unknown to the ordinary consciousness supervising the process and able afterwards to report details of how it was done. Dr. Prince being familiar with many facts that appear to be of the latter kind, naturally believes in the subconscious in the sense of the coconscious. Perhaps his unusual familiarity with facts of that kind warps his judgment as much as Dr. Pierce's lack of familiarity with such facts makes him, in the opinion of Dr. Prince, unable to interpret such facts. The subconscious explanation is readily used and difficult to test in any reliable way, while the physiological explanation with improvement in neurological methods will be able to apply exact objective test to the phenomena. Hence unless the mass of evidence is overwhelmingly in favor of the subconscious explanation, it seems safer for the scientist to attempt to use the physiological explanation until more is known.

It is especially important, now that comparative and genetic psychology are receiving so much attention, that the real function of consciousness should be determined. It is to be hoped that the discussions regarding the subconscious will not become a mere dispute about terms, but will lead to a more definite conception of the part played by consciousness in the behavior of men and of animals of all grades.

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TRUTH VALUE[1]

AS I read the invitation of the program committee to prepare a paper on "Truth-Value" I thought at first: "How delightful to have a subject so free from the dust and blood of the arena." For however much we may disagree, and however little we may know about the nature and the criterion of truth, we are all sure of its great "value." We are all prepared to say, as one of Pro-

[1] One of a series of papers read at a symposium on value held at the holiday meeting of the Western Philosophical Association, in Chicago, December 31, 1907, and January 1, 1908.

fessor Angell's elementary pupils once said of the nervous system, "What should we do without it!"

But, alas for him who reckons without the guile of the program committee! That committee knew full well that it might have difficulty in finding some one—even a pragmatist—willing to talk further at this time on the "nature" or "criterion" of truth. And it knew equally well that any attempt to talk about the "value" of truth, apart from its nature, could end only in pious exclamations. It knew that every attempt to describe truth value and to discriminate it from other values, must be a description of its nature. So when the familiar refrains and the old shibboleths sound in your ears, I hope you will remember who is responsible. Not that the last right word has yet been spoken on the nature and criterion of truth, but that so much has been said in the search for the right word that I fear many of you would fain turn awhile to other problems.

If we begin with the most general and formal phase of the subject, the usual statement is that truth and error are values belonging to the experience of judging. But such a statement is obviously verbal until we go on to state *what* the value of this judging experience is. And this brings upon us at once the entire problem of the place and function of judging in the whole process of experience, and with it the issue between logical-absolutism and certain forms of realism, on the one hand, and "instrumentalism" on the other.

The contention of the logical-absolutist is that truth and error values are the satisfaction and the dissatisfaction of a special and independent "part" or "side" or "aspect"—using Mr. Bradley's phrases—of our nature. In his article on "Truth and Practise" (*Mind*, 1904), Mr. Bradley says: "Reality is the satisfaction of all the wants of our nature, and theoretical truth is those perceptions and ideas which directly satisfy *one* of those wants." Thinking, then, appears to be the operation of a specialized instinctive want coordinate with the other instincts, as eating, drinking, reproduction, etc. Indeed Mr. Bradley comes near to saying this in so many words, albeit somewhat facetiously, when he says: "Metaphysics is a finding of bad reasons for what we believe on instinct—but to find these reasons is no less an instinct."[2]

With truth-value thus based on a special and independent instinctive need, an uninitiated observer might at first sight wonder that the supporters of this view are so shocked at Professor James's metaphysical pluralism, for this conception surely appears plural-

[2] In his paper which followed this at the symposium, Professor McGilvary frankly states and defends the special-instinct view of thought, using eating and drinking as analogues.

istic enough. But a second look dispels the wonder. For with so much logical and psychological pluralism as this view of thought as the expression of an independent instinct involves, nothing short of an omnipotent metaphysical absolute can save unity and continuity. On the other hand, Professor James can revel freely in his metaphysical pluralism just because he has so fortified his logical and psychological continuity in human experience that he can rest assured that no pluralistic metaphysical horde, however great, can ever destroy it. In general it appears that what we neglect in our psychology and logic we try to make up in our metaphysics. Metaphysics seems to be a sort of clearing-house for the accounts between our logic and unreflective experience.

And while we are about it another paradox or two in the situation may be worth a glance. For instance, we see the immediate-empiricist, Dewey, insisting upon the mediate, instrumental character of thought, while the absolutists are contending for its independent immediacy. Again, the logical-absolutist not only professes to accept the instrumentalist's doctrine of the relativity of truth and error to need, want, purpose, but characterizes it as a pathetic case of exploiting a truism. In the article above cited, Mr. Bradley says: "To me it seems obvious that if some function belongs to our nature there will be a need and a desire which correspond to that function. Hence if the free use of the intellect is really one aspect of our being, we shall in consequence have a need and a desire for that use." So we find the absolutists, Royce and Taylor, and the realist, Perry, all agreeing that *true* judging is the satisfaction of a want—a purpose, namely, the purpose to judge *truly!*

The instrumentalist's reply is that *this* is indeed not only a truism, but an unblushing *petitio* of a real issue, and that to him the truly pathetic thing is his critics' complacent satisfaction with it. Suppose we say: "Truth is what satisfies the cognitive need." "How trifling!" Locke would say, until we go on to show *what* the cognitive-need is, *how* it differs from other needs, and *how* it goes about satisfying itself. In such questions as these the real issue between the absolutist's and the instrumentalist's logic is defined.

If truth is the satisfaction of a special instinct coordinate with the other instincts, the first question is: What is this instinct's peculiar satisfying material or object? And here we seem halted. For there appears to be no special object analogous to those of the other instincts. The content of any thought always turns out to be the material of some other instinct. Besides, if thought has its own special material, what becomes of its universality?

"Universality." That word gives us a new cue and suggests that we may have been on the wrong scent for the object of the cog-

nitive instinct. For does not universality belong to such things as major, minor, and middle terms? Here, then, perhaps, is to be found thought's satisfying portion. The cognitive need is a hungering for universals and particulars, a thirsting after subjects and predicates, a yearning for syllogisms and episyllogisms; while negatively it is a congenital horror of such things as illicit majors and minors and undistributed middles.

This gentle mockery, I am sure, can not give offense, for nothing could surpass the contempt with which absolutists themselves have rejected formal logic, "as witness the hilarious scorn which Mr. Bradley has leaped upon the devoted head of the syllogism." The reasons for this repudiation are familiar. I need mention only a few of them. First, if the formal processes were the satisfying content of thought, the material ought to be perfectly indifferent. The length of the Devil's tail or the color of Eve's eyes should be as satisfying material as anything else. Again, if the material be indifferent and thought goes on according to its own independent and immutable laws, where is there any place for error, for dissatisfaction? Still again, if dissatisfaction does *somehow* arise, what is to determine when truth is reached again? If we answer: "Simply the sense of *consistency* peculiar to the cognitive instinct," what saves thought from the subjectivism *supposed* to characterize the other instincts, as hunger, thirst, etc.?

The situation at this point is, then, that, if the formal processes are rejected, thought, though a special and independent instinctive need coordinate with the other instincts, has yet no corresponding peculiar satisfying material. What is to be done? What *has* been done so far in history of logic is to compromise by admitting the dependence of thought for its *material* upon the other instincts, but still clinging to its independence as a process. The consequence of this sort of compromise has been the train of incurable "contradictions" and "antinomies" which have harassed the entire history of logic, and which end in the confession that so long as the cognitive instinct must be dependent on the other instincts for its materials no "perfect" satisfaction, no "real" truth-value, is possible. The indispensable condition of reaching such a state, says Mr. Bradley, in effect, is that thought should be independent, not only as a process, but in its material as well. That it should, in short, produce its own material.[3]

We all know how, at this point, Professor Royce came valiantly to the rescue with his famous map of England and the self-representative number-series as illustrations of how thought could produce its own material. But many think (1) that even in the self-repre-

[3] "Appearance and Reality," 2d ed., appendix, pp. 562 ff.

sentative number-series the contributions of the other instincts are discoverable; and (2) that as an illustration of what thought can do in the way of producing its own differences when the other instincts are shut out as far as possible, the result is not very promising in the way of variety.

At about this stage of affairs the "instrumentalist," "pragmatist," or "radical empiricist" (whatever you will), came into the discussion. He began by agreeing with Bradley and with Royce that the one thing needful is continuity between the process and the content of thought. But the attempt to secure this by having thought produce its own material had, in his opinion, failed. Falling back, then, upon Bradley's position that thought draws its materials from the other instincts, and groping about for a new clue, he kept putting such questions as these: What determines *when* thought draws upon the other instincts for material? And what determines *what* material it selects and just *what* it is to do with them? Observations in response to these inquiries seemed to show: (1) that the materials selected are always those of instincts which have come into conflict in the process of satisfying or "expressing" themselves; (2) that it seems to be the work of thought to deal with this conflict; (3) that it sets about this through analysis and synthesis; (4) that success or failure in effecting the resolution of the conflict marks the limits of this process of analysis and synthesis, *i. e.*, determines specifically truth and error.

Concerning truth-*value* he could say, so far, at least this much: that thought's satisfaction is not independent of the satisfaction of the other instincts. Rather does it seem to find its satisfaction precisely in quelling the dissatisfaction due to the conflict of the other instincts. Their extremity is thought's opportunity.

Still the breach between the process and the material of thought remained. But, said the instrumentalist, there is yet an alternative, namely, the reverse of Royce's experiment. That is, instead of attempting to meet Bradley's demand for continuity by having thought produce its own material, why not have *the material produce its own thought?* The term "produce," however, leaves the connection still too loose. Rather, why not regard these instincts in conflict *as developing into both the process and the content of thinking?* Just as the contents of the conflicting instincts are not left behind when thought begins, but go on over *into* the thinking as *its* content, so, on the other hand, there is no thought machine or faculty already there *in advance* waiting to receive the material of these instincts. The process of thought is just the process of this conflict of instincts working itself out through interaction with other and *for the present purpose* more stable values.

Here no specter of the "given" need haunt our logic. For this specter pursues only that logic which assumes a *pre*existent, purely cognitive faculty, or machine, or agent, or entity of some sort, to which this instinctive material is to be "given."

Here it should be understood that we are not speaking, as so many have supposed, of an absolute origin of thought in the universe. The instrumentalist may readily agree that as this conflict of instinctive values has always existed, so thought has always existed. And that as this previous thinking results in reconstructed instincts, so any present conflict is, in this sense and to this extent, an outcome of previous thinking. But he insists that this previous thinking, as the present, was not performed by a purely cognitive agent, or faculty, or instinct, *upon* a material "given" to it by the other instincts.

Also this view does not mean, from the standpoint of value, that this readjusting, revaluing stage into which the contents of the conflicting instincts pass, has not its own peculiar value; nor that it may not be regarded as an "immediate" value, as all value, in a sense, must be. But it insists that we must keep in mind that the *content* of this "immediate" value is just this entire experience of conflicting instinctive values undergoing *mediation* and revaluation. It is the value of experience as undergoing control in contrast with experience in chaotic conflict. But not control *by* a special faculty or instinct of control. Control is a "stage" of experience, not a "part," or "side," or "phase," of it.

There is, to be sure, always in this revaluation or control stage some value (or values) that serves as the end or purpose. But the control is not *all* lodged in the purpose. The end is only one pole of the whole process of gaining control. In this sense the *end* is a *means* of control. But, again, the main point here is that the end is not furnished by an outside, independent faculty or instinct which operates as a special "end factory," whose business it is to keep a supply ahead or, failing this, to make one "while you wait." This end is born of the conflicting instincts. It is "bone of their bone and flesh of their flesh."

Our outcome thus far is, then, that truth-value is not the satisfaction of a special instinct coordinate with the other instincts, but that it is the value of the entire experience of readjusting conflicting values through the process of redistribution of values effected by interaction with a wider and *relatively* more permanent range of relevant values.

I am painfully aware of the extremely general character of all this; that it gives no details of this revaluating stage; that it leaves unnoticed the different elements in the constitution of truth-value

out of which spring the ambiguities of the term "truth," in which it is identified now with the subject, now with the predicate, of the judgment; now with what we *have* attained, again with what we are *seeking*. I am mindful that we have not touched that old, but ever perplexing, tangle of relationships between truth-value on the one side, and ethical, esthetic, and economic values on the other. We say in one breath that truth is a value belonging to judgment as such, and in the next we speak of ethical, esthetic, and economic judgments. Does truth, then, belong only to one kind of judgments? Or are ethical, esthetic, and economic judgments special forms of truth? Or are they all coordinate values belonging to every judgment? Or are they all stages through which every judgment passes? And if so, what determines these stages? But in fifteen minutes much must be sacrificed, and in the minute or two left I wish to anticipate two or three general objections.

The first is likely to be a challenge of this whole conflict-mediational view of thought and its value. "How," it will be asked, "can it apply at the level of perceptual judgments?" *e. g.*, "This is paper," or "This paper is white." Where is the conflict here? "Well," the instrumentalist will answer, "there may not be any conflict. But *if* there is not, then there is no judgment." And he will declare that here, as so often in philosophy, language bewrayeth us. We assume that because we repeat the words that *have* expressed, or *might* express a judgment, that they do now. And he will suggest that a simple but effective way to test the presence of a real "live" judgment, to use Dr. Thompson's term, is to preface the alleged judgment with the term "I think," or "I judge," or "I have an idea." If the statement "This is paper" means "I think," or "I judge," or "I have an idea," that it is paper, then it is a real judgment. If it does not mean this, it is merely a direct articulatory response to the visual and tactual stimulations, and is no more a judgment than tearing it, or poking it, or setting a match to it. Once more, judging means *inquiry*. Inquiry means *doubt*, and doubt means *conflicting impulses*.

Again, it may be said even if conflict in immediate experience does lead to thinking, it is no less obvious that thinking leads to conflict. What experience more common, alas! than to find that the more we think the worse the tangle becomes. But this is only the familiar paradox of "fighting for peace" or a "painful cure of a pain." Obviously, as the conflict develops into the thinking stage it may prove to be much more far-reaching and deep-seated than it was immediately *felt* to be. Fortunately, on the other hand, it often, if not so often, turns out the other way.

Admitting once more the conflict character of knowledge,

it will be said, as it has been said, that this problem is not experienced as a conflict of *instinctive* values, but is experienced from the very start *as* a cognitive problem, as a problem of knowledge. The instrumentalists reply: Of course it is. For when the conflict in immediate values has gone beyond the blind pull-and-haul, thrashing-about stage, and has developed into the problem form, it is already in the cognitive stage, and is, of course, so experienced.

As for the objection that this view of thought value "subordinates" the intellectual "side" or value to the other "sides" or values, I confess I am unable to see how the conception of thought as the experience in which already constituted values are reconstituted, revalued, makes it subordinate to these values. The converse would be as true—and as false. As true and as false as to say: "speaking is subordinate to words or painting to colors."

Finally, if it be said that this "instrumental" view of thought destroys the character of immediacy which is fundamental in value, the answer is: This objection assumes that the *value* of an instrument must itself be instrumental. But this is no more the case than a perception of a heap must be a heap of perceptions.

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REVIEWS AND ABSTRACTS OF LITERATURE

Proceedings of the Aristotelian Society. N. S., Vol. VII., 1907. London: Williams and Norgate. Pp. 244.

I. *Nicholas de Ultricuria, a Mediæval Hume.* HASTINGS RASHDALL.

Evidence of a bold skepticism meriting mention in the history of philosophy is afforded in the list of errors charged against Nicholas of Autricourt by the Papal Court in 1340. A follower of Occam and Roger Bacon, influenced by Aristotle and the Commentator Averroes, Nicholas also shows a marked skepticism and idealism far in advance of his times. "Of the existence of material substance distinct from our own soul we have no evident certainty," he says. We can not, however, be quite sure as to whether idealism or skepticism is the position which he holds. His skepticism, we are told, reaches its culmination in the article, "This is a first principle, and there is no other, 'If something is, something is.'" Though the loss of such writings as might show the arguments for these advanced doctrines makes it difficult to give them a complete interpretation, and, in particular, to judge absolutely as to whether they stand for skeptical and idealistic convictions, or as mere alternate propositions held as equally sure with those of a more realistic and dualistic order—and therefore arguing for the value of faith; yet we have enough recorded in this short paper to warrant the thought that, owing to the difficulties

attending the publication and preservation of documents during the middle ages, we have doubtless lost sight of many powerful influences in the development of thought.

II. *On the Nature of Truth.* BERTRAND RUSSELL.

The argument of logical monism that only the whole of truth is true leads us into certain difficulties. "(1) If no partial truth is quite true, this must apply to the partial truths which embody the monistic philosophy," thus rendering invalid any deductions made. "(2) It is a consequence of the monistic theory that the parts of a whole are not really its parts. Hence there can not be any genuine whole on this theory, since nothing can be really a whole unless it really has parts. (3) The theory is unable to explain in what sense one partial judgment is said to be true and another false, though both are equally partial. (4) In order to prove that there can be only one coherent whole, the theory is compelled to appeal to 'experience,' which must consist in knowing particular truths, and thus requires a notion of truth that the monistic theory can not admit." The doctrine of the whole truth is based upon an "*axiom of internal relations.*" But this axiom is untenable, because if there is but one truth it can not be constituted in relations. The law of sufficient reason when called in to justify the axiom fails, since it must always mean a reduction to simpler propositions, whereas the monistic idealist must hold that the simpler a proposition is the less true it is. Neither does the argument hold that two terms must have a relation because if they did not have it they would be different. The hypothesis of the two terms in another relation is false, and from a false hypothesis nothing can be deduced.

Following the view which admits of many truths, "two theories seem tenable, one of which regards truth as the quality of beliefs which are beliefs in *facts,* which are the only non-mental complexes, while the other regards truth and falsehood as both capable of belonging to non-mental complexes, which we call *propositions,* of which there are two kinds, *facts,* which are true, and *fictions,* which are false. Between these views, the decision is to be made, it would seem, by considerations of detail, as to the result of which it would be rash to decide hastily."

III. *On Causal Explanation.* PERCY NUNN.

In this paper the reader is treated to an interesting, though somewhat complex and not always perfectly clear, discussion of the relation of the explanatory notion of cause to the *data* which it is supposed to explain. If I understand the author aright, his principal conclusions may be summed up as follows:

There are three types of explanatory hypotheses. The first consists in adding to the incomplete spatio-temporal data elements of the same order which will make the system complete. This constitutes a true causal explanation and is, at least ideally, verifiable, but it is characterized as belonging to the "*intuitional* stage of knowledge." The second type consists in adding relations which exist between spatio-temporal existences.

Explanations of this type are also ideally verifiable, but they "have, as a rule, the status not of *causes* but of *reasons*." They "seek to render intelligible not the existence of objective phenomena, but only their quantitative determinations." The third type is the most interesting, though the least stringent, since it consists in not merely completing the data, but in replacing them by factors which lack homogeneity and are quite unverifiable. The typical illustrations here are the abstract notions of force and matter. In an endeavor to avoid hypotheses of this last type, "dynamical explanations" tending to drop the causal explanation and substitute a purely mathematical functional relationship are formulated. But these, the author contends, though they do approach the second type of hypothesis in form, really find their ultimate basis upon a causal mechanics which depends for its significance on metaphysical interpretations of other than a strictly homogeneous character—that is, they are but abstractions from the notions of matter and force.

From what context, then, are these notions of force and a material background borrowed? It is the context of "intersubjective intercourse," the author concludes, which provides us with fundamental notions of individuality and reaction, and causes us to offer them for causal explanation even within a field where they can not be proven to belong. In turning to the explanation of living matter, we find that the first two or verifiable causal methods, though proving of great importance in explaining primitive life, are yet unable to grapple with the problem of the "so-called psychic phenomena." Here again it is the context of "intersubjective intercourse" which affords the only successful hypothesis. And so, "finally, we may, perhaps, conclude that we have here something which really does stand to the material environment (including its own body) in relations which are totally different from the relations, as far as we can judge them, in which the parts of the environment stand to one another, relations which are . . . actually the source of the causal ideas of persistent individuality and force upon which science has so constantly relied to render intelligible the behavior of the material universe."

IV. *Logic and Identity in Difference.* E. E. CONSTANCE JONES.

The author pleads for a "more general recognition of the importance of the notions corresponding to the terms in question" (identity and difference) "and of the harm which results from the unprecise way in which they are used, and an attempt to avoid this latter by careful distinction and differentiation." The result of such "distinction and differentiation" is that "Identity in Diversity may mean (1) 'numerical' or 'individual' identity in qualitative difference (as in S *is* P); (2) numerical difference in qualitative likeness (as with members of a class); (3) qualitative likeness in qualitative difference (as with genus and species, or coordinate species)." To these three are then added a fourth, or the unity in difference of the members of a system or "any whole of related parts." These four fundamental and ultimate forms, the author

contends, are all subject to logical treatment, and "for a theory of Logic we want a clear analysis of what is involved in these common and inevitable forms."

V. *Humism and Humanism.* F. C. S. SCHILLER.

After noting common empirical tendencies and common pragmatism, in so far as Hume's pragmatism can be taken seriously, Schiller proceeds to array the two systems against each other and point out the existence of a closer relationship of Humism to the intellectualism against which Humanism principally strives than any existing between Humism and Humanism. The upshot of the discussion is that Hume in criticizing rationalism by means of her own purely intellectual terms was led only into skepticism, whereas Humanism, though equally opposed to pure intellectualism, is a "professional," positive attempt to replace this bankrupt species of idealism by a voluntaristic libertarian view which evades Hume's position and criticism, especially with respect to causation and activity, by declining to accept Hume's intellectualistic postulates: that (1) "intellection is the only philosophically valuable human faculty"; that (2) "nothing but intellection is necessary to cognition"; that (3) the purer the intellection the truer will be the results; that (4) "cognition means rendering the mind *passively* receptive" of "reality" or "truth"; that (5) "anything in the nature of human activity or initiative can only exercise a malign or disturbing influence on our cognitive procedure." In opposition to these postulates Humanism contends that (1) "intellection is not the only valuable function in human life, nor the source of its value"; that (2) intellection does not suffice to explain cognition, nor even to explain itself, since real knowing always involves "such non-intellectual aspects as desire, interest and purpose"; that (3) it is frequently not true that "the 'purer' the intellection, the more valuable the results"; that (4) cognition is never merely a passive recognition, but is "always an interaction with a reality which is still capable of being moulded to some extent by our action"; (5) "that human activity, therefore, is nothing science need be ashamed of or metaphysics frown upon, but is rather the fountain head of philosophic understanding, which can be neither ignored or suppressed." The conclusion is that the affiliation of Humanism to Humism is misleading, and suggests that it is intellectualism alone which is "groaning and groveling in the grip of Hume."

VI. *Fact, Idea, and Emotion.* SHADWORTH H. HODGSON.

The author proposes to substitute the questions as to *What is* and its *Real Conditions* for the older metaphysical problems of substance, agent, and cause. If thought is conceived as creating its own content, after the manner of the idealists, it must be regarded as inadequately conditioned, since, presupposing time and space, as we must, time, at least, is an element in the constitution of thought itself. This being agreed, "time-duration" is taken by the author as a criterion for establishing a dualistic realism which works out somewhat in this wise. Time-dura-

tion is inseparable from the two aspects of consciousness which are forced upon us; namely, consciousness as knower and consciousness as known, or "existent." The same time-duration applies to each in the case of perception; but not so in the case of representation, for here the content as a knowing may be of any length, while its "length of duration as an existent . . . may be very brief." This forces on us the conception that real conditions are inseparably bound up with the perception of things visible and tangible which, "when objectified as qualities, we call material objects." Therefore, we are compelled to attribute "all positively known efficiency or real conditioning to something which is not consciousness." This is not to be construed as materialism, since that involves "bringing material organisms under the common-sense conceptions of causes, substances, or agents, accounting for the whole nature of their effects, attributes, or actions;—conceptions which we now see to be anything but ultimate or explanatory."

As a consequence of this view, truth is "our perception or idea of compulsorily perceived fact, whether existent or event or relation between them." It is not *a priori,* but rests on the distinction of knowing and being, without which distinction, as, for instance, in the case of the idealists, the meaning of truth is gone. Truth, in fine, must "conform to those facts of presentation or representation which we can not help being aware of."

With regard to emotion and the basis of ethics, these experiences as specific feelings "stand to the representational . . . process as the specific sensations stand to the process of sense-presentation; they are, as it were, the sensations of the representational process . . . intelligible only in terms of ideas, representations or thoughts. . . ." As an "existent," therefore, emotion makes a moral character which expresses itself in a feeling of preferability, and there is "no higher moral authority positively known to us" than the "reflective judgments of conscience." It is neither an ideal form of pleasure, nor an ideal end, but just a "development of our own nature and character by acting under the constant guidance of the reflective judgments of conscience" which constitutes the fundamental doctrine of ethical practise.

As to freedom, analysis shows that *process* is indifferent to freedom or compulsion. In looking back upon a process "you take it as known fact or knowledge, and then law is bound up with it; if you look forward, you take it as action, determining the unknown and as yet non-existent future, in which, until determined, there is no law."—"Action makes law, not law action." Yet, if the analysis of consciousness *per se* reveals a certain lack of constraint or freedom, the conception of conscious being involves both consciousness and a non-conscious matter "in combination with one another as conditioning and conditioned. The conscious being is free—where he is free—in virtue of his action, which belongs to his neuro-cerebral activity, he is responsible—where he is free—in virtue of his self-judgment, which belongs to his consciousness."

VII. *Intuition.* A. T. SHEARMAN.

This paper consists of two parts. The first considers "The Position of Intuition in Philosophy," and concludes that intuition furnishes the starting point and prompts the selection of a method for treating the data. It is, therefore, accountable for the number of differences between philosophical systems. Since the success of a philosophical system "depends not merely upon the cogency of its arguments, but also upon the acceptability of its premises, and of its method," every philosopher tends to have his own system, and it is seen that "past systems have produced comparatively little satisfaction. A system produced as the result of the voluntary cooperation of expert philosophers would be likely to create a greater amount of satisfaction than would attend individual efforts," though it "may quite well in the future give place to another. It can not positively be asserted that the most satisfying system is that which is nearer the truth, but we may hope that this is so. The expression of such hope rests upon the intuition, which most, perhaps all, of us have, that we ought to seek the truth."

The second part of the paper considers "the grounds of our knowledge of that which it is sometimes affirmed has a 'consciousness of self as self.'" The conclusion is, that although we may differentiate a subjective and an objective self, and that the objective self is directly perceived, we have only indirect knowledge of the subjective self, as it can neither be perceived nor intuited. We may, however, intuit in intellectual terms the subjective self of another. Evidence for the existence of this subjective self consists (1) in the fact that "when we predicate individual experiences of the objective self" this "involves the existence of a subjective self to whom both the objective self and the individual experiences are presented"; (2) in the fact that the subjective self feels—the objective self being merely presented can not feel; (3) in the fact that the subjective self attends, "for in the case of no presentation does intensity depend entirely upon the strength of the physical stimulus."

The conclusion with respect to feeling gives rise to a long discussion in which Ward's position is maintained, that, though while they are actually existing, pleasure and pain can not be attended to, they "may, just as they have ceased to exist, affect presentations in two different ways, which we style respectively pleasant and painful," that which is recognized being an after-effect. The question, "How can something not a presentation produce a change in the continuum of presentations?" is disposed of as a mystery which must be posited, although it is noted that the mystery is no greater than that involved in the case of the inception of any presentation. It is concluded that "mental life consists of presentations, and these indicate the existence of attention, which increases at the same time that their number and intricacy increase, and of feeling, which is never attended to, but which leaves qualitative, quantitative or successional alterations in presentations, whereby these are spoken of as pleasant or painful." The latter portion of the paper consists in an *Auseinandersetzung* with Drs. Stout and Dawes Hicks in the matter of certain recent papers of theirs which attack the same theme.

VIII. *Philosophy and Education.* BENJAMIN DUMVILLE.

In a rather elaborate discussion of educational systems, the author points out the failure of traditional humanistic, realistic and naturalistic methods, and pleads the "need of education for philosophical guidance." Only on the broad basis of a "comprehensive philosophy of life," he contends, can we "hope to grapple successfully with the problem of education, which is, indeed, coextensive with life itself."

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The Negro Races. JEROME DOWD. New York: The Macmillan Co. 1907. Pp. xxiii + 493.

The author of this work claims to make a new departure in sociology. He parts company with those who, "in tracing the evolution of society, have constructed theories based upon data selected promiscuously from opposite quarters of the earth and from many different races" and devotes himself in turn to individual races. A somewhat similar task was undertaken by Featherman in his "Social History of the Races of Mankind" (1885), which he called a manual of sociology, but with the admission that such a science was "as yet non-existent." To-day Mr. Dowd is able to give us more than a series of descriptive monographs; he aims to trace the connection between locality and the different forms of evolution and "to discover the factors and laws which explain mental and moral characteristics" and institutions within racial limits.

The work is planned on an ethnic basis, with geographical subdivisions; and this volume on the negro races, for which the author claims a special and obvious interest in America, is only the first of a series designed to embrace the whole human family. No one can fail to admire the courage which inspired so great an undertaking or will withhold from this first volume the verdict of a painstaking, careful compilation.

To Mr. Dowd, ethnic classification is not a mere convenience of terminology or arrangement; therefore it is relevant to join issue with him on some points of ethnological interest. His inclusion of the Gallas of Somaliland and Abyssinia among negroes scarcely agrees with the latest views held by anthropologists (*vide* Professor Keller, A. H. Keane, *et al.*). In their case, color is only "skin deep," to quote Dr. Duckworth, "and judged by their osteology . . . they are associated with the white races." The tendency to-day is to distinguish also between the Negritoes, or Negrillos (Pygmy races), and the Bushmen; the contrast between the extreme prognathism of the former and the orthognathism of the latter is sufficiently decisive, not to mention the differences of stature and cephalic index. Nor is it accurate to quote steatopygy (from Ratzel) as a characteristic of the Negritoes. It is the feature of Bushmen and only a faint appearance of it is seen among Pygmies, in some who are not of a pure type. A reference to more recent writers, Sir H. H. Johnston, F. C. Shrubsall, and Dr. W. L. H. Duckworth, would correct the earlier reports. These and some minor points tend to modify the physical de-

scriptions given by Mr. Dowd and raise questions on that most difficult of subjects—racial classification.

Taking the "negro races" as his first study, Mr. Dowd divides them, according to their habitat, into geographical zones, which he calls the banana, millet, cattle, and camel zones; he then addresses himself to the task of establishing the special evolution of the race in each particular zone. To the conservative historian, the caption "Political Life of the Banana Zone" might come as "a red rag to a bull" and make him steel himself to meet the onslaught of "laws of geographical control." For it seems as if geographers, flushed by the first success of their new enterprise, were ready to deny human control of nature even in historic times; in respect to prehistoric peoples, however, or those yet in a primitive stage, little exception can be taken to a claim for the great influence of physical environment.

How does Mr. Dowd fulfill his object, "to establish the fact that each race has its distinctive institutions and special evolution corresponding to the locality in which it lives or has lived"? The following may be taken as an example of his deductions. In accounting for the decrease of fetichism in the millet zone as compared with the banana zone, he remarks that it "is due in great part to the fact that the people have to exert their minds and bodies more vigorously to live, and hence bring about more development of their reason. Being obliged to do more to overcome nature, they necessarily become less afraid of it." On the whole, his arguments are well sustained, though the layman sometimes feels suspicious of a science so provided with laws, that a fresh one is forthcoming for every phenomenon, alike for norm and exception. Also one is inclined to raise the question whether we know enough of the movements of African races previous to the last four hundred years to say what has been the environment of each tribe or people. It is agreed, for example, that the Bushmen have not always been a desert race. This is important if we are to concur with the author as to the great determining influence of environment, and also allow him in the present stage of biological and psychological knowledge, or ignorance, to hold with Professor Reinsch that "inherited psychological elements—the constitution of the mind—are the most persistent phenomena of which we have any knowledge." Perhaps under the influence of previous writers, our author underestimates the negro's mental activity. Dr. Boas has administered a healthy corrective to the white man's ready assumptions, by demonstrating the power of abstract thought and of inhibition possessed by primitive peoples. We do not recognize these powers because they are applied to objects or customs which do not exist among ourselves. Moreover, we label peoples as far inferior whose mental activity may be quite respectable, failing to observe that an erroneous interpretation of perceptions may be the result of logical processes, based upon traditional material of an entirely different character from our own.

Following the example of such writers as Col. Ellis, Miss Kingsley, and Sir Samuel Baker, the author, imbued with the highest moral convictions, concludes his work with some sound advice to missionaries. It

is to be hoped that potential laborers in the foreign mission field may profit by it, in which case this volume will not have been written in vain.

Not to missionaries alone, but also to all interested in the solution of the negro problem in this country, Mr. Dowd has rendered a valuable service by revealing the sociological conditions of the negro in his native land, and it is greatly to the author's credit that he writes of the black man's character and capacities with a studied impartiality.

Of the book as a whole it must be said that it leaves on the mind of the reader the impression of a conscientious inventory. In these days we need not be surprised to meet among newly developed types of book-making a card-catalogue type. A compendium of this kind is useful to the casual reader, and much more so to the student, but is lacking in the sustained interest which a well-planned scientific work may share with a successful piece of literature, by wise observance of emphasis and subordination. Mr. Dowd gives ample references; his bibliography would, however, be of more service if the initials of authors were included. Every one has experienced the loss of time in looking up authors with no other clue to their identity than such common names as Clark, Robinson, Ward. Also the frequent references to Fritsch in the bibliography do not mention which book of his is cited.

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The Philosophy of Common Sense. FREDERIC HARRISON. New York: The Macmillan Co. 1907. Pp. xxxvi + 418.

"I admit that metaphysicians, even of these latter days, exhibit extraordinary subtlety and intellectual power. I agree with them that no man can pretend to speak about philosophy at all unless he has done his best to master the vast evolution of metaphysical thought. I have done this." In this condescending sentence the former president of the English Positive Committee introduces a volume which consists in the main of papers read at the Metaphysical Society between the years 1871 and 1880. Submitted in his old age "to all who are seeking some sound basis of life," the work exhibits a philosophical Bourbon who learns nothing and forgets nothing; for since he was affected by the philosophy of his youth the writer seems to have been affected by little else. To him, as to a courtier of the *ancien régime,* the light of knowledge was considered to have come to a focus in one brilliant personality. Comte was his king, and the law of the three states his law.

It will be remembered that the French philosopher summed up in his theory of the three stages—theological, metaphysical, and positive—the essential steps in human progress, and in reaching the positive stage appeared, at least to this his disciple, to have reached the limit of progress. But Harrison did not go far enough. If there be any value in the positivist's synthesis, it lies in the fact that it represents a recurring process, and not an arrested cycle of development. Thus in the history of American speculation, native thought, passing through the theological

stage in Puritanism, the metaphysical in deism, the positive in realism, did not stop there, but, in a measure, reversed itself. After the "common sense" period there was a return of "metaphysical" interests in the idealism of Emerson, and all the strictures of the positivists against transcendentalism do but prove that it satisfied a persistent human demand. But neither have "theological" interests died out in the land, for the present revival of interest in the philosophy of religion is manifest in its mystical aspects among the uncritical "new thoughters," and in its practical side among the hypercritical pragmatists. Hence to the observer of recurrent mutations of belief the Comtean formula is not adequate. The metaphysical interest is not to be confined within a closed and static circle, but should rather be considered a vital and permanent issue among men. So, instead of the law of the three states, one would prefer Vico's cycle of belief, or, better still, a conception of the intellectual life as a cycloid, a curve traced by a point of an ever moving wheel.

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Are Mental Processes in Space? Wm. P. Montague. *The Monist*, January, 1908. Pp. 21–29.

Two important arguments against the existence of mental processes in space are (1) that they would then have definite spatial figure and be spatially related to one another; and (2) that all space is continuously filled with matter so that no room is left for psychical or non-physical states. But sensory qualities, save those of sight and touch, are felt as neither punctiform nor figured, and yet as definitely located in space. "And as for the mentioned non-spatiality of the *relations between* mental processes, experience offers countless instances of relations equally non-spatial, but which subsist between things about whose existence in space there is no question. Such, for example, are the relations of likeness and difference, harmony and dissonance, etc." And as to the second objection, Professor Montague finds that *potential energy* is something which, although as immaterial as consciousness, exists in space; and has a further resemblance to consciousness in being, as it were, physically invisible. This last property it is which prevents one from believing that consciousness is a mode of motion, or kinetic energy; but we can not "so easily dismiss the proposition that consciousness is a mode of potential energy. It may be said that the experience of stress or strain is not any more like the psychical in general than is the experience of motion. We must remember, however, that as velocity can be transformed into energy of acceleration, so acceleration can pass into the second derivative of the velocity. *The modes of potential energy into which nerve currents and other motions can pass include in addition to acceleration, the whole endless series of higher derivatives of space with regard to time, and in these purely intensive magnitudes and their mutual relations and combinations we have a system which is sufficiently rich and complex to express the manifoldness and multidimen-*

sionality of psychic life" (italics in original). Thus mental processes may be regarded as truly existing in space, in spite of their lack of definite figure.

In the same number of the *Monist* Dr. Paul Carus has offered several objections to this view of consciousness. One of these is that a physiological state of rest always coincides with a state of rest in consciousness, so that mental activity can not mean "a passive condition of an uneventful storage." To this Professor Montague's reply would probably be that if consciousness is identical with the potential energy in brain-cells, then every physiological change in these cells is correlated with a change in consciousness, and *vice versa*. And during "dreamless sleep," for instance, consciousness may not be absent, but merely so changeless as quite to elude the memory. A change in the potential energy is, according to the theory, a change of a higher derivative; which is again consciousness. Another of Dr. Carus's objections is, that "the problems of life and the ideals of mankind are not to be sought in the domains of either matter or energy, but are, all of them, without any exception, questions of form. . . . A materialistic monism loses sight of the significance of form and, with it, of all intellectual, moral, artistic, and religious treasures." The author would, perhaps, reply that something in the nervous system must account for these "forms," and that nothing is more adapted thereto than potential energy. And yet, indeed, it is one thing to say that the potential energy accounts for the forms of the contents of consciousness, and quite another to say that it *is* these latter.

The theory above reviewed, as its author states, bears resemblance to the views of Ostwald and others, and its author presents it as a form of interactionism which remarkably fits the facts. It should be carefully weighed by all who are hoping to find that consciousness *is* something else, as, say, some form of brain action.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. May, 1908. *Les sens esthétiques* (1er article) (pp. 449–470): Ch. Lalo. – Historically organized arts appeal to only two senses, sight and hearing. Traditional theories give no satisfactory explanation of this fact. *De l'image á l'idée: Essai sur le méchanisme psychologique de la méthode allégorique* (pp. 471–482): Emile Bréhier. – A study of the way in which thought exteriorizes itself in images and inversely, of the way in which images grow into ideas. *La genèse psychologique de la conscience morale* (pp. 483–502): Bertrand Mertens. – An account of the relations of certain ethical feelings to pathological conditions of the organism. *Revue Générale: Publications récentes sur la morale:* J. Segond. *Analyses et comptes rendus.* F. E.

Abbot, *The syllogistic Philosophy or Prolegomena to Science:* A. PENJON. H. Marcus, *Die Philosophie des Monopluralismus:* DR. JANKELEVITCH. Thiaudière, *La conquête de l'infini:* L. ARRÉAT. A. Binet et Dr. Ch. Simon, *Les enfants enormaux:* DR. J. ROGUES DE FURSAC. Antheaume et Dromard, *Poésie et folie:* DR. CH. BLONDEL. Marie et Meunier, *Les Vagabonds:* DR. CH. BLONDEL. C. Flammarion, *Les forces naturelles inconnues:* DR. JANKELEVITCH. Grasset, *L'occultisme d'hier et d'aujourd'hui:* DR. JANKELEVITCH. Bauer, *Essai sur les révolutions:* DR. JANKELEVITCH. C. Bos, *Pessimisme, Féminisme, moralisme:* LIONEL DAURIAC. *Revue des périodiques étrangiers.*

REVUE DE METAPHYSIQUE ET DE MORALE. May, 1908. *Bichet et la biologie contemporaine* (pp. 261–280): F. COLONNA D'ISTRIA – This study traces the influence of Bichet's work in anatomy on all the sciences of living organisms in our day. *Les quaractéristiques probables de l'image vraie* (pp. 281–320): J. MALDIDIER. – The characteristic of an image most clearly indicating its truth is its resistance to eliminating and modifying activities of the will. *Importance philosophique de la théorie des nombres* (pp. 321–345): M. WINTER. – The fundamental notions of arithmetic interpenetrate algebra and analysis, so the philosopher will find arithmetic a most fruitful object of philosophic study. *Études critiques: La philosophie de Wundt: Metaphysique* (pp. 346–371): H. NORERO. *Questions pratiques: Examen critique des conditions d'efficacité d'une doctrine morale éducative* (pp. 372–420): J. DELVOLVE. *Supplement.*

Goddard, Harold Clarke. *Studies in New England Transcendentalism.* New York: The Columbia University Press. 1908. Pp. x + 217.

Hebberd, S. S. *Impending Anarchy.* New York: Maspeth Publishing House. 1908. Pp. 93 + 3.

Sérol, Maurice. *Le besoin et le devoir religieux.* Paris: Gabriel Beauchesne & Cie. 1908. Pp. 216. 2 fr. 50.

Shinn, Milicent Washburn. *Notes on the Development of a Child. II. The Development of the Senses in the First Three Years of Childhood.* University of California Publications. Education. Volume 4, July, 1907. Berkeley: The University Press. 1907. Pp. 258.

Wells, Frederic Lyman. *Technical Aspects of Experimental Psychopathology.* Reprinted from *American Journal of Insanity,* Volume LXIV., No. 3, January, 1908. Pp. 477–512.

NOTES AND NEWS

PROFESSOR BAWDEN contributes to the July number of the *Popular Science Monthly* an article on "The New Philosophy called Pragmatism." He recognizes three distinct phases of the movement as follows: Professor James emphasizes the practical meaning of the philosophy for every-day

life; Mr. Schiller defends the rights of religious faith and feeling in determining our beliefs; Professor Dewey is the champion of a scientific, empirical method in philosophy. It is to be questioned, however, how far these phases have been really distinct in pragmatism's short history, and how far the philosophers named are to be characteristically associated with each phase. "The pragmatic philosophy," Professor Bawden states, "by virtue of the fact that it purports to be a *philosophy,* is a form of idealism." He consequently finds some humor in the present philosophical situation, since "the pragmatists in practise repudiate pragmatism as a theory, while, on the other hand, the pragmatic theorists fail to see their own incorrigible idealism." Professor Bawden uses the term "idealism" in a very broad sense. We suspect, however, that it is not broad enough to bring peace between the "idealists" and the "pragmatists." In the same number Professor Wenley continues his paper on "The Movement towards 'Physiological Psychology,'" following the development of the "true physiological line" down to the contributions of Lotze, Fechner, and Wundt. These are to be the subject of the next installment.

THE Third International Congress of Philosophy will meet at Heidelberg on August 31 and continue its sessions until September 5. The following sections have been arranged: 1, history of philosophy; 2, general philosophy, metaphysics and the philosophy of nature; 3, psychology; 4, logic and the theory of knowledge; 5, ethics and sociology; 6, esthetics; 7, philosophy of religion. Papers may be presented in German, English, French, and Italian. Notices of papers for the various sections should be sent not later than the 15th of August to the general secretary, D. Elsenhans, Heidelberg, Plöck 79. In order to provide for ample discussions it is particularly requested that papers should not exceed fifteen minutes in length. Several general discussions have already been announced: "The Nature of Truth in the Light of Recent Discussion," Josiah Royce; "Il carratere lirico dell'arte e l'intuitione pura," Benedetto Croce; "L'etat actuel de la philosophie en France," E. Boutroux; "L'idée de devenir," H. Bergson; "Zum Begriff der Philosophie," Theodor Lipps.

A GOLD MEDAL was recently struck and presented to Professor Ramon y Cajal, in the name of his friends and admirers throughout Spain. Professor Cajal refused to permit a public ceremony, and the medal was presented informally at his home on May 27.

PROFESSOR ALFRED EDWARD TAYLOR, professor of philosophy in McGill University since 1903, has been appointed to the chair of moral philosophy at the University of St. Andrews.

MESSRS. BLOUD AND COMPANY, of Paris, announce that the publication of the *Archives de Neurologie* will be resumed under the editorship of Dr. A. Marie, chief physician of the Asile de Villejuif.

THE Rev. Dr. Otto Pfleiderer, professor of theology at the University of Berlin, died on July 20. He was born at Stettin in 1839.